

LANCASTER GENERAL COLLEGE OF NURSING AND HEALTH SCIENCES
Cardiovascular Invasive Specialty

SYLLABUS
Sophomore Year, Fall Term (15 weeks)

- I. Title: CIS 205 Invasive Procedures
- II. Course Description: The purpose of this course is to prepare the student to enter the Cardiovascular Invasive Laboratory. The student will explore in detail the construction and purpose of specialized equipment and its utilization during invasive procedures. Topics of exploration include cardiovascular equipment, and Cardiac Catheterization lab and Peripheral Vascular Lab procedures.
- III. Prerequisite: None
- IV. Placement: Fall Term
- V. Time Allotment: Theory 45 hours
- VI. Faculty: Richard Visco, RCIS
Office: LGCNHS Building, 2nd Floor
Phone: 544-4700
Pager: 305-1271
- VII. Credits: Three (3)

VIII. Evaluation:	A. Theory Grade	<u>Weight</u>	<u>Time/Date</u>
	Unit Exams	50%	Weeks 4, 8, and 16
	Comprehensive Final Exam	25%	
	Quizzes	15%	
	Class Activity/Participation	10%	

***A grade of "C" (2.0) is required to pass the theory portion of the course.**

- IX. Textbooks:
- Grossman, W. & Baim, D. (2006). Cardiac Catheterization Angiography & Intervention. (7th ed.). Baltimore: Williams & Wilkins
- Watson, S. & Gorski, K. (2005). Invasive Cardiology- A manual for Cath Lab Personnel. (2nd ed.). Physicians' Press
- Optional Textbook
Kern, Morton. The Cardiac Catheterization Handbook, 4th Edition. Mosby Yearbook, Inc. 2003.

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X. Course Objectives:

By the conclusion of the course:

1. The student will be able to explain the historical evolution of cardiac catheterization.
2. The student will be able to explain contraindications, indications, and complications of invasive procedures
3. The student will be able to explain contraindications, indications, and complications of peripheral vascular procedures
4. The student will be able to identify and demonstrate use of equipment used for performing an invasive procedure.
5. The student will be able to identify coronary anatomy using coronary angiography.

XI. Program Policies: Students are held accountable for all policies in the Student Handbook and any revisions made to those policies during the academic year.

XII. Class:

A. Importance of Attending Class

Cardiovascular education comprises more than just private reading and passing of exams. Students should recognize that active and informed participation in class is essential to the development of their intellectual abilities and scholarly growth. Students must also recognize the importance of achieving an academic record that reflects their intellectual ability. Such records are seldom achieved without regular attendance and participation in class activities. Attendance will be taken.

B. Student Responsibility for Missed Material

Students are responsible for all material presented and announcements made in class, regardless of attendance. It is the student's responsibility to obtain materials and assignments if absent.

- C. **Unit Examinations** -Examinations should only be missed in extenuating circumstances. A student who misses an examination will be required to make up the examination on the next day of lecture. Contact the instructor, prior to the next lecture day to make arrangements to take the exam.
A student who misses an examination, regardless of the reason, will have ten percent (10%) deducted from the grade achieved on the exam.
Example: The exam is worth sixty (60) points, the student takes the exam and achieves a grade of 52/60. The score of 52 is then decreased by ten percent (10%) or five (5) points, thus the grade on the exam will be 47/60. An alternate examination may be given for the make-up examination.
- D. **Class Behavior** - Once class has started, the instructor has the prerogative not to admit students into lecture. Students will be dismissed from class for any inappropriate behavior.
- E. **Written Assignments** -All submitted work (with the exception of clinical notebooks) must follow the *Publication Manual of the American Psychological Association (5th ed.)* unless directed otherwise by the course instructor

XIII. Other:

Academic Dishonesty and Plagiarism

Academic dishonesty violates the spirit and purpose of an academic community, and is therefore subject to disciplinary action. Academic dishonesty includes cheating on examinations and unauthorized duplication of work.

Plagiarism is an act of academic dishonesty. Any work submitted that is not your own is an act of plagiarism. In preparing assignments, you must acknowledge in writing, any use of outside sources or any assistance you received in preparing an assignment. All written work must be submitted adhering to LGNHS guidelines.

If an instructor believes that a student has committed an act of academic dishonesty or has plagiarized material, the instructor may award a failing grade for that assignment. If the occurrence is during an examination, the student will receive a zero for that portion of their grade and must leave the room.

If the student disagrees with this decision, the student may follow the grievance procedure.

XIV. Revisions

This syllabus is subject to revision by the faculty at any time.

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CONTENT	HOURS	STUDENT ACTIVITIES	COURSE OBJECTIVE
<p>Unit 1</p> <p>I. Introduction to Invasive Cardiovascular Medicine</p> <ul style="list-style-type: none"> A. History B. Cardiology Today <p>II. Pre - Procedure</p> <ul style="list-style-type: none"> A. Preparation of patient B. Medication administration <p>III. Cardiovascular Medications</p> <p>III. Patient care during procedure</p> <p>IV. Invasive Procedure Types</p> <ul style="list-style-type: none"> A. Left heart catheterization <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications B. Right heart catheterization <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications C. Interventional catheterization <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications C. Peripheral Vascular procedure <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications <p>V. Access Approaches</p> <ul style="list-style-type: none"> A. Procedure type <ul style="list-style-type: none"> 1. Surgical cut-down 2. Percutaneous B. Access sites <ul style="list-style-type: none"> 1. Arterial 2. Venous 	<p>7.5</p>	<p>Required Readings: Grossman: Chapters 1, 3, 4, 5, 22, and 24</p> <p>Classroom Activities: Lecture, Video, Overhead transparencies, and equipment demonstration</p>	<p>1,2</p>

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CONTENT	HOURS	STUDENT ACTIVITIES	COURSE OBJECTIVE
<p>UNIT 2:</p> <p>V. Equipment</p> <ul style="list-style-type: none"> A. Needles B. Guidewires <ul style="list-style-type: none"> 1. Materials 2. Design 3. Sizes C. Introducers D. Diagnostic Catheters <ul style="list-style-type: none"> 1. Materials 2. Design 3. Sizes 4. Types E. Specialized Catheters <ul style="list-style-type: none"> 1. Therapeutic Catheterization 2. IABP/ Interventional F. Hemostasis Devices <p>VI. Diagnostic Procedures (Angiography)</p> <ul style="list-style-type: none"> D. Ventriculography <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Specialized Equipment E. Coronary Arteriography <ul style="list-style-type: none"> 1. Indications 2. Contraindications 	15	<p>Required Readings: Grossman: Chapter 4,11,12</p> <p>Classroom Activities: Lecture, Overhead transparencies, Equipment demonstration</p>	2,4
<p>Unit 3</p> <p>VII. Identification of Coronary Anatomy in Opacification</p> <ul style="list-style-type: none"> A. Left Coronary Artery <ul style="list-style-type: none"> 1. Left Anterior Descending 2. Circumflex 3. Diagonals 4. Marginals B. Right Coronary Artery <ul style="list-style-type: none"> 1. SA branch 2. Conus branch 3. Marginals 	15	<p>Required Readings: Grossman: Chapter 11,13,14,21,26</p> <p>Classroom Activities: Lecture, Overhead transparencies, Equipment demonstration</p>	2, 3,4,5

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CONTENT	HOURS	STUDENT ACTIVITIES	COURSE OBJECTIVE
<p>4. AV nodal branch</p> <p>VIII. Intra-Aortic Balloon Pump</p> <p>A. Physiology</p> <p>B. Indications</p> <p>C. Contraindications</p> <p>D. Insertionequipment</p> <p>E. Technique</p> <p>IX. Specialized Angiography</p> <p>A. Pulmonary angiography</p> <p>1. Indications</p> <p>2. Contraindications</p> <p>3. Risks</p> <p>4. Complications</p> <p>5. Equipment</p> <p>6. Procedure</p> <p>B. Aortic angiography</p> <p>1. Indications</p> <p>2. Contraindications</p> <p>3. Risks</p> <p>4. Complications</p> <p>X. Equipment Specialized Procedures</p> <p>A. Endomyocardial Biopsy</p> <p>1. Indications</p> <p>2. Contraindications</p> <p>3. Risks</p> <p>4. Complications</p> <p>5. Equipment</p> <p>6. Procedure</p> <p>B. Coronary artery spasm</p> <p>1. Indications</p> <p>2. Contraindications</p> <p>C. Transeptal Catheterization</p> <p>1. Indications</p> <p>2. Contraindications</p> <p>3. Risks</p> <p>4. Complications</p> <p>5. Equipment</p>			

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CONTENT	HOURS	STUDENT ACTIVITIES	COURSE OBJECTIVE
XI. Peripheral Vascular Procedures <ul style="list-style-type: none"> A. Carotid angiography <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications 5. Equipment B. Renal Angiography <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications 5. Equipment C. Iliac Angiography <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications 5. Equipment 			
Unit 4 XII. General Invasive Procedures <ul style="list-style-type: none"> A. Temporary Pacemaker Insertion: <ul style="list-style-type: none"> 1. Indications 2. Contraindications 3. Risks 4. Complications 5. Equipment 6. Procedure B. Triple-lumen Catheter Placement <ul style="list-style-type: none"> 1. Indications 2. Equipment C. Angiography Review <ul style="list-style-type: none"> 1. Coronary anatomy in diagnostic procedures 2. Specialized procedures 3. Catheter Review <ul style="list-style-type: none"> a. Diagnostic catheters b. Therapeutic catheters 	7.5	Classroom Activities: Overhead transparencies Equipment Demonstration	2, 4

CIS 205 Course Schedule

Week	Topic	Location	Week
Unit 1			
8/20	Introduction to Invasive Cardiovascular Procedures	205	1
8/22	Pre-Invasive Procedures	205	1
8/27	Invasive Procedures	205	2
8/29	Invasive Procedures	205	2
9/03	No Class - Holiday	205	3
9/05	Access Approach	205	3
9/10	Exam 1	205	4
Unit 2			
9/12	Equipment - Needles, Guide wires, Introducers	205	4
9/17	Equipment – Diagnostic Catheters	205	5
9/19	Equipment – Diagnostic Catheters	205	5
9/24	Equipment – Specialized Catheters	205	6
9/26	Diagnostic Procedures	206	6
10/1	Diagnostic Procedures	205	7
10/3	Diagnostic Procedures	205	7
10/8	Diagnostic Procedures	205	8
10/10	Exam 2	205	8
10/15	No Class – Fall Recess	205	9
Unit 3			
10/17	Coronary Angiography	205	9
10/22	Coronary Angiography	205	10
10/24	Intra-Aortic Balloon Pump	205	10
10/29	Intra-Aortic Balloon Pump	205	11
10/31	Specialized Angiography	205	11
11/5	Equipment Specialized Procedures	205	12
11/7	Equipment Specialized Procedures	205	12
11/12	Peripheral Vascular Procedures	205	13
11/14	Peripheral Vascular Procedures	205	13
11/19	Exam 3	205	14
Unit 4			
11/21	Diagnostic Invasive Procedures Review	205	14
11/26	Equipment Review	205	15
11/28	Angiography Review	205	15
12/3	Audience Response System Review	205	16
12/5	FINAL	205	16